

REMARKS/ARGUMENTS

Applicant respectfully requests the examiner to reconsider the prior art rejections set forth in paragraph No. 4 and paragraph No. 5 of the office action in light of the following comments and submissions.

With regard to the examiner's rejection as set forth in paragraph No. 4 of the office action, the examiner has made the following comments with regard to the arguments previously presented by Applicants for patentability.

"In the remarks, applicant argues that the combination of Bengston in view of Tomlinson would not have been obviousness since Bengston in view of Tomlinson will result in the formation of toxic nitrosamines in the coating solution due to the presence of nitrate and NTMP.

Applicant's argument is not persuasive since Tomlinson's coating solution actually contains both nitrate and NTMP (col. 3 lines 17-32, col. 5 lines 23-30) and Tomlinson does not mention any formation of toxic material. Since applicant has not submitted factual evidence demonstrating the formation of nitrosamine in the coating solution of Bengston in view of Tomlinson in a concentration that would be toxic to the environment, the examiner considers applicant's argument as mere allegations and not convincing."

As factual evidence demonstrating the formation of nitrosamines and the toxicity of same, Applicants attach hereto as Exhibits A and B to abstracts from published articles which clearly support Applicant's arguments that tertiary amines react with nitrous acid to form carcinogenic nitrosamines. Accordingly, it is believed that Applicants' argument regarding the proposed combination of Bengston in view of Tomlinson as set forth in paragraph No. 4 of the examiner's office action are persuasive. The combination of Bengston and Tomlinson will result in the formation of toxic nitrosamines which are carcinogenic and highly

undesirable. Accordingly, it is respectfully submitted that the examiner's rejection of the claims as currently pending based on the combination of Bengston in view of Tomlinson should be withdrawn.

With regard to the previous arguments presented by Applicant's to rebut the rejections set forth by the examiner in paragraph 6 of the instant office action, the examiner comments as follows:

"In the remarks, applicant argues that it would not have been obvious to combine the prior art references since the primary and secondary references applied by the examiner deals with aluminum coatings not conversion coatings of magnesium.

The examiner does not find applicant's argument persuasive since the Tomlinson reference is incorporated into the second rejection ground since Tomlinson teaches that a phosphate, fluoride and organophosphoric acid containing coating solution can be applied to both aluminum and magnesium surfaces (col. 2 lines 17-21). Therefore, one of ordinary skill in the art would have found it obvious that the cooling solution of Matsushima in view of Oppen and Tomlinson can be applied to a magnesium substrate with expected success."

Applicant respectfully requests the examiner to reconsider this position as, Applicants believe, the position is untenable and belies the concept of the whole clause of 35 U.S.C. 103. In this regard the following should be noted.

"Tomlinson's 5,380,374 patent teaches a very specific class of coatings that are based on a combination of Group IVA metals (preferably zirconium) and Group IIA metals (preferably calcium). It is clear from column 4, lines 55-64, that calcium contributes to the zirconium and zirconate matrix of the coating. The coatings of the present invention do not have a zirconate or Group IVA matrix. The role of the ATMP crystal deformation agent is discussed in Column 5, line 23-30, of '734 as reducing the crystal size of the deposited coating, which is to be established by zirconium and zirconate. It is also

clear from column 3, lines 33-54, that the fluoride in Tomlinson's solution serves a very specific function that is directly related to the deposition of the zirconium coating matrix.

Tomlinson's teachings therefore relate to a very specific type of conversion coating that is generated by the decomposition of a Group IVA metal / fluoride complex that is modified by the presence of a Group IIA metal. This very specific solution composition and coating formation mechanism is not present in either the invention or that of Matshushima and Oppen. Given the explicit nature of Tomlinson's solution composition and deposition mechanism, it is not obvious to combine with Tomlinson the different chemistry and deposition mechanisms in Matshushima and Oppen."

In light of the foregoing submissions and arguments, it is submitted that the claims as pending patentably define over the art of record and an early indication of same is respectfully requested.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

If any fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,

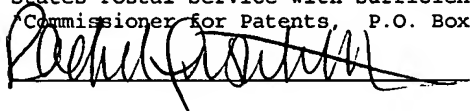
Xia Tang et al.

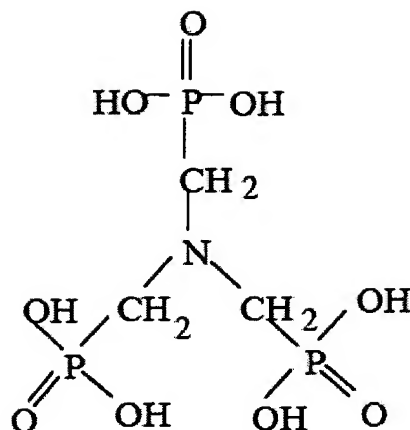
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I, Rachel Piscitelli, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:
Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on June 13, 2006.





a) nitrilotris(methylene)triphosphonic acid

173. D. A. Hardwick, J. S. Ahearn, and J. D. Venables, "Mechanical Properties of Adhesively Bonded Aluminum Structures Protected with Hydration Inhibitors, Second Year Report)," *Tech. Rep. MML TR-23c* (1982).

Blocking nitrosamine formation. Understanding the chemistry of rapid nitrosation. Loeppky, Richard N.; Bao, Yen T.; Bae, Jaeyoung; Yu, Li; Shevlin, Graziella. Dep. Chem., Univ. Missouri, Columbia, MO, USA. ACS Symposium Series (1994), 553(Nitrosamines and Related N-Nitroso Compounds), 52-65. CODEN: ACSMC8 ISSN: 0097-6156. Journal; General Review written in English. CAN 121:75362 AN 1994:475362 CAPLUS

Abstract

A review with 34 refs. The fundamental chem. principles of blocking inadvertent nitrosamine formation and contamination through the recognition of structural features which predispose compds. toward rapid nitrosation as well as the development of new blocking agents are discussed. Rapid nitrosamine formation from tertiary nitrogen compds. such as amines, amidines, and gem. diamines is shown to occur through an electron pair assisted nitrosative solvolysis type mechanism. The rapid prodn. of nitrosamines from amidinocillin, an amidine contg. antibiotic, and hexetidine, a widely used antimicrobial agent., are presented as examples of new findings. The development and assay of new monomeric and polymeric blocking agents is described. An advantage of the latter blocking agent is its ability to be removed from mixts. by phys. means. This knowledge and these measures permit significant redns. in nitrosamine contamination to be realized

Formation of nitrosamines from tertiary amines and nitrous acid. Lijinsky, W.; Singer, G. M. Biol. Div., Oak Ridge Natl. Lab., Oak Ridge, TN, USA. IARC Scientific Publications (1975), 9(N-Nitroso Compd. Environ., Proc. Work. Conf., 1973), 111-14. CODEN: IARCCD ISSN: 0300-5038. Journal written in English. CAN 83:109582 AN 1975:509582 CAPLUS

Abstract

Tertiary amines readily reacted with nitrous acid [7782-77-6] at pH 3-6 and 37° to form carcinogenic nitrosamines. The large aliph. tertiary amines gave higher yield than did the short chain compds. Trimethylamine [75-50-3] and trimethylamine oxide [1184-78-7] appeared to react by different mechanisms with HNO₂ since there was a large difference in the yield of nitrosodimethylamine (NDMA) [62-75-9] from the 2 compds. under the same conditions when the ratio of nitrite to amine was varied. Using 0.5M amine at lower ratios of nitrite to amine, the yield of NDMA from the N-oxide was much lower than from triethylamine.

Indexing -- Section 4-7 (Toxicology)

Section cross-reference(s): 17

102-82-9

Role: BIOL (Biological study)

(dibutyl nitrosamine formation from nitrous acid and)

121-44-8, uses and miscellaneous

Role: USES (Uses)

(diethylnitrosamine formation from nitrous acid and)

1116-76-3

Role: BIOL (Biological study)